



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,856	12/18/2006	Duck Gil Lee	HI-0274	6845
34610 7590 05/14/2008 KED & ASSOCIATES, LLP P.O. Box 221200 Chantilly, VA 20153-1200				
EXAMINER				
LEUNG, PHILIP H				
ART UNIT		PAPER NUMBER		
3742				
MAIL DATE		DELIVERY MODE		
05/14/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/575,856

**Applicant(s)**

LEE, DUCK GIL

**Examiner**

PHILIP H. LEUNG

**Art Unit**

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date 9-18-2007 & 3-27-2008

**DETAILED ACTION**

1. The drawings filed on 4-14-2006 are acceptable.
2. Claims 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In regard to claim 5, the limitations “width is narrowed” and “width is widened” is structurally unclear because they imply the exhaust guide is “gradually varying in width” (but the specification at lines 21-29 of page 9 and Figures 3-6 do not support this interpretation). The term “convexoconcave portion” in claim 7 is not understood as there is no description in the specification. In regard to claim 8, the limitation “the exhaust passage hole is inclined downwardly” appears to be in contradiction with the description at lines 34-36 of page 10 wherein it states that “the exhaust passage holes 450 are formed with an upward inclination”. Clarification and correction are required.
3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preamble “an air flow passage of a microwave oven” of the claims is misdescriptive as the claims are clearly directed to a microwave oven with an air flow passage. For example, claim 1 includes a cavity and electric component chamber. It is therefore suggested to rewrite the claims as a microwave oven as the air flow passage is only an element of the oven. In regard to claim 2, should “are/or (the second occurrence) be “are/is” instead (compare claim 12)? In regard to claim 5, the limitations “width is narrowed” and “width is widened” is structurally unclear. More particularly, “the width” of the portions has not been defined and the term “narrowed” and “widened” is meaningless without a reference. In claim 7, the term “convexoconcave” is not understood as there is no description in the specification. In claim 11, “for radiating at least microwave” is not understood as “a stirrer fan” cannot radiate microwave by itself. In regard to claim 14, the term “one sided portion” is not understood. Clarification and correction are required.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 6, 13, 16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US 5,798,505) (cited by the applicant).

Lee shows an air flow passage of a microwave oven comprising: a cavity 100 for accommodating foods therein; an electric component chamber 200 disposed at a predetermined portion of the cavity; a suction hole 14a formed at one sided portion of the cavity such that the

cavity communicates with the electric component chamber; an exhaust hole 13a formed at the other sided portion of the cavity, through which air sucked through the suction hole is exhausted; an exhaust guide 111 covering an outer wall 13 of the cavity where the exhaust hole 13a is formed, for guiding air exhausted through the exhaust hole to an outside of the microwave oven; and a back plate 12 having an exhaust passage hole 12f communicating with one end of the exhaust guide 111, through which air is exhausted (see Figures 1-4 and col. 3, line 22 – col. 6, line 3). Similarly, the claimed structure in claim 13 is also met: an air flow passage of a microwave oven comprising: a suction hole 14a formed between a plate on which foods (a dish of food) are placed and a cavity 100, through which air of an electric component chamber 200 is introduced; an exhaust hole 13a through which air introduced through the suction hole 14a is exhausted; an exhaust guide 111 for guiding air exhausted through the exhaust hole 13a to an outside of the microwave oven; and a back plate 12 having an exhaust passage hole 12f for exhausting the air guided by the exhaust guide to an outside of the microwave oven. The claimed structure in claim 18 is also met: an air flow passage of a microwave oven comprising: an exhaust hole 12a formed perforating a wall surface of one side 12 of a cavity 100, through which an inner air of the cavity is exhausted; an exhaust guide 111 covering the exhaust hole 12a and guiding air exhausted through the exhaust hole to an outside of the microwave oven; and a plate 12 having an exhaust passage hole 12f communicating with an inside of the exhaust guide 111 and forming an outer wall of one side of the microwave oven. In regard to claim 19, the rectangular shaped exhaust guide 111 inherently has an inner space formed by the walls as claimed. In regard to claim 20, the exhaust guide 111 can be inherently and arbitrarily assigned

Art Unit: 3742

a guide portion (the front part nearest the exhaust holes 13a) and an exhaust portion (the back portion nearest the back plate 12) as claimed.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being obvious over Lee (US 5,798,505), in view of Ikeda (JP 62-297634).

As set forth above, Lee '505 shows every feature except for the location of the suction hole and the exhaust hole. Ikeda shows a microwave oven with a food supporting plate 8 dividing the oven chamber into upper and lower portions and a fan 3 blows air into suction holes 6, 6' through the two chamber portions and exiting the chamber at exhaust holes 7, 7' respectively (see Figures 1 and 2 and the English abstract). It would have been obvious to an ordinary skill in the art at the time of invention to modify Lee '505 to provide a plate supporting the food and use suction holes and exhaust holes above and/or below the plate for better and more efficient heating result, in view of the teaching of Ikeda.

9. Claims 2, 11 and 12 are rejected under 35 U.S.C. 103(a) as being obvious over Lee (US 5,798,505), in view of Almgren et al (US 4,424,430).

As set forth above, Lee '505 shows every feature except for the use of a mode stirrer between the suction holes and the exhaust holes (claim 11). Almgren shows a microwave oven

having a cavity 10 with a food supporting plate 23, an air suction hole 41 on one sidewall 14 and an air exhaust hole 43 on opposing side wall 13 with a mode stirrer disc 24 for radiating microwave (see Figures 1-3 and col. 4, line 30 – col. 3, line 55). It would have been obvious to an ordinary skill in the art at the time of invention to modify Lee '505 to use a microwave mode stirrer between the air suction hole and the air exhaust hole so that it is rotated by the air flow for better and more even microwave heating results, in view of the teaching of Almgren. In regard to claims 2 and 12, as shown above, Almgren also shows the location of the suction and exhaust holes as claimed.

10. Claims 4, 5, 7, 8, 10, 15 and 21 are rejected under 35 U.S.C. 103(a) as being obvious over Lee (US 5,798,505), in view of Lee (CN 1230663) (cited by the applicant).

As set forth above, Lee '505 shows every feature except for the exhaust guide having two portions that are different in widths. Lee '663 shows a microwave oven having a guide member for discharging air, wherein a protrusion part 45 protruding outwardly of an inner case 15 is formed on a part outside of the guide member 41 (corresponding to the "exhaust guide" in claim 4), i.e., the exhaust guide has at least two portions that are different in width (Figure 1 and page 4, lines 5-6). It would have been obvious to an ordinary skill in the art at the time of invention to modify Lee '505 to form the exhaust guide with two portions having different widths to facilitate discharge of air within the microwave oven to the outside thereof, in view of the teaching of Lee '663. In regard to claims 7, 8, 10 and 15, the exact structure of the exhaust guide and the use of a fixing device, such as screws would have been a matter of obvious engineering expediences depending on the overall structure of the oven.

11. Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being obvious over Lee (US 5,798,505), in view of Frimmel (CN 1085321) (cited by the applicant).

As set forth above, Lee '505 shows every feature except for "the air flow passage further comprising a water permeation preventing portion formed at an upper portion of the exhaust passage hole. Frimmel shows a guide protrusion 82a (corresponding to the "water permeation preventing portion" in claim 9) which is formed on an exhaust hole 80b (corresponding to the "exhaust passage hole" in claim 9) protrudes outwardly from the exhaust hole 80b such that if water drops on the exhaust hole 80b, the outwardly protruding guide protrusion 82a can prevent the water from entering the exhaust hole 80b (see Figure 4 and page 4, lines 15-19). It would have been obvious to an ordinary skill in the art at the time of invention to modify Lee '505 to form the exhaust passage with a water permeation preventing portion to prevent water from permeating into an inside of the microwave oven, in view of the teaching of Frimmel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H. Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Philip H Leung/  
Primary Examiner, Art Unit 3742  
P.Leung/pl  
5-2-2008



